



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| | | | | |
|--|-------------|----------------------|---------------------------------------|------------------|
| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/568,549 | 02/17/2006 | Dirk Schiller | LYBZ200099 | 4378 |
| 7590 05/01/2008 Fay Sharpe Fagan Minnich & McKee 1100 Superior Avenue Seventh Floor Cleveland, OH 44114-2518 | | | EXAMINER DOERFLER, WILLIAM CHARLES | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3744 | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 05/01/2008 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/568,549

Applicant(s)

SCHILLER ET AL.

Examiner

William C. Doerrler

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date 2-17-2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saho et al (5,443,548) in view of Morishita et al (6,233,948). Saho et al disclose applicants' basic inventive concept, a system of cryopumps (1) with a compressor (6 and 10) with a throttle 22 and a valve 55 in a parallel bypass line around the throttle, with the control of the valves disclosed as occurring at various temperatures, without ever specifying that a common controller is used. Morishita et al show this feature to be old in the cryopump control art with processor 12 controlling multiple cryopumps. It would have been obvious to one of ordinary skill in the art at the

time of applicants' invention from the teaching of Morishita et al to modify the cryopump with a coolant bypass of Saho et al by using a controller to ensure efficient operation of the cryopump. When valve 55 is open, the maximum refrigerant amount enters the cryopump, so this is seen as the maximum medium supply. In regard to claim 4, it is noted that valve 22 of Saho et al is a Joule-Thomson valve, and these valves are customarily adjustable. It is further noted that valve 55 is adjustable, as the purpose of valves is to adjust the flow through a conduit. In regard to claims 8 and 10, it is noted that increasing the flow of refrigerant through a pipe to increase the cooling is customary in the heat transfer art.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudebeck (4,461,635) in view of Dresens et al (7,127,901). Rudebeck discloses applicants' basic inventive concept, a cryopump (line 4 of column 1) with a compressor 1, adjusting means 10 which controls the flow of refrigerant in relation to a sensed temperature (sensor 20 connected through line 17) and a bypass (line 15) with a valve (16) to enable compressed refrigerant to bypass the adjusting means which throttles the refrigerant, substantially as claimed, with the exception of controlling a plurality of cryopumps. Dresens et al show this feature to be old in the cryopump art. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention from the teaching of Dresens to modify the system of Rudebeck by controlling a plurality of cryopumps to enable a larger vacuum volume. Valve 16 is seen to enable the maximum medium supply to the heat exchanger, when open. It is further noted that valve 16 is adjustable, as the purpose of valves is to adjust the flow

through a conduit. In regard to claims 8 and 10, it is noted that increasing the flow of refrigerant through a pipe to increase the cooling is customary in the heat transfer art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okumura et al show a control system for multiple cryopumps. Eby et al show a cold trap with a bypass line around a heater to control temperature. Flynn shows a cryogenic cooling system with a bypass around a throttle line.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 3744

William C. Doerrler
Primary Examiner
Art Unit 3744

WCD

/William C. Doerrler/
Primary Examiner, Art Unit 3744